

THAMES RIVER FLOOD CONTROL

WEST THOMPSON

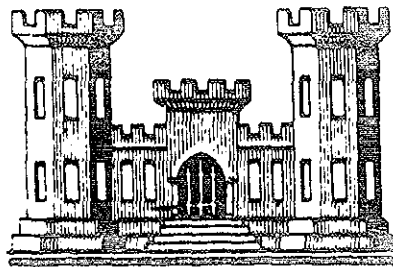
DAM & RESERVOIR

QUINEBAUG RIVER, CONNECTICUT

DESIGN MEMORANDUM NO. 9A

PRELIMINARY PLAN FOR RESERVOIR DEVELOPMENT

(PART OF THE MASTER PLAN)



U.S. Army Engineer Division, New England
Corps of Engineers Waltham, Mass.

FEBRUARY 1963

U. S. ARMY ENGINEER DIVISION, NEW ENGLAND
CORPS OF ENGINEERS

424 TRAPELO ROAD
WALTHAM 54. MASS.

ADDRESS REPLY TO:
DIVISION ENGINEER

REFER TO FILE NO.

NEDCW

11 February 1963

SUBJECT: Design Memorandum No. 9A, Preliminary Master Plan
for Reservoir Development - Part of the Master
Plan for West Thompson Reservoir, Quinebaug River,
Thames River Basin, Connecticut

TO: Chief of Engineers
ATTN: ENGCW-O
Department of the Army
Washington, D. C.

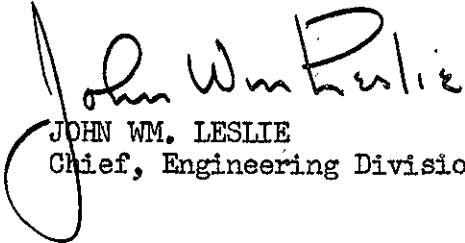
1. In accordance with EM 1110-2-1150, there is submitted for review and approval Design Memorandum No. 9A, Preliminary Master Plan for Reservoir Development - Part of the Master Plan for West Thompson Reservoir, Quinebaug River, Thames River Basin, Connecticut, together with a copy of this letter bound in each copy of the memorandum.

2. The plan has been initiated to provide for maximum utilization of the reservoir by the public consistent with the resources of the area and the authorized purposes of the project.

3. Approval is requested.

FOR THE DIVISION ENGINEER:

Incl (quint)
Des Memo No. 9A
West Thompson Reservoir


JOHN WM. LESLIE
Chief, Engineering Division

FLOOD CONTROL PROJECT

WEST THOMPSON DAM

QUINEBAUG RIVER

THAMES RIVER BASIN
CONNECTICUT

DESIGN MEMORANDA INDEX

<u>Number</u>		<u>Submission Date</u>	<u>Approved</u>
1	Hydrology and Hydraulic Analysis		
	Preliminary	10 May 1962*	22 Jun 1962
	Final	20 Aug 1962	27 Sep 1962
2	Geology	18 Jan 1963	
3	Real Estate	28 Dec 1962	
4	Relocations	31 Oct 1962	12 Dec 1962
5	General Design	24 Aug 1962	28 Sep 1962
6	Embankment		
7	Concrete Materials		
8	Detailed Design of Structures	7 Dec 1962	
9A	Reservoir Management (Preliminary)	11 Feb 1963	
9B	Reservoir Management (Final)		

*Initial submission in draft to secure approval of spillway design flood and top of dam.

THAMES RIVER BASIN, CONNECTICUT

QUINEBAUG RIVER

DESIGN MEMORANDUM NO. 9A

PRELIMINARY MASTER PLAN

FOR

RESERVOIR DEVELOPMENT

PART OF THE MASTER PLAN

FOR

WEST THOMPSON RESERVOIR, CONNECTICUT

This report, prepared in the Planning and Reports Branch of the Engineering Division, New England Division, has been coordinated with the Real Estate Division and is recommended for approval.

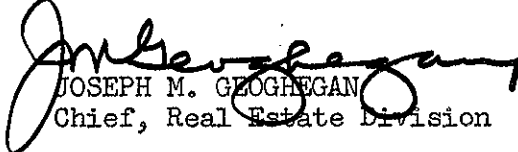

JOSEPH M. GEOGHEGAN
Chief, Real Estate Division

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I. INTRODUCTION

1-01. Authorization. The West Thompson Dam and Reservoir was authorized by the Flood Control Act approved 14 July 1960, Public Law 86-645, as an addition to the comprehensive plan for flood control in the Thames River Basin.

Authorization for development and use of reservoir areas for public recreational and other purposes is contained in section 4 of the Flood Control Act approved 22 December 1944 (Public Law 534, 78th Congress, 2nd Session), as amended.

This Preliminary Master Plan for reservoir development has been prepared in accordance with EM 1130-2-302, Planning and Administration of Project Lands and Waters, and related manuals.

1-02. Scope of Report. This report presents a preliminary plan to serve as a guide in the subsequent program for the development, management and use of the West Thompson Reservoir for public purposes which are compatible with the authorized project purposes. This report presents a description of the project, factors affecting recreational activities, sites selected for public use and access, views of other agencies, and a preliminary estimate of the cost. It is intended that this plan will be flexible so that adjustment may be made to it as changing conditions may warrant.

1-03. Maps. The maps incorporated in this report depict the geographic area in which the project is located, public recreation areas in the vicinity of the project, reservoir features and a proposed development plan. The reservoir map is at a scale of 1"=1000'. Additional detailed topography will be required in the development areas.

II. DESCRIPTION OF AUTHORIZED PROJECT

2-01. Location. The West Thompson Reservoir will be located on the Quinebaug River in the Town of Thompson, Windham County, Connecticut, 2 miles upstream from the City of Putnam, and about 1,000 feet upstream from the confluence of the Quinebaug and French Rivers. The Reservoir will extend upstream along the Quinebaug River about 6 miles. The entire reservoir site will be contained by the Town of Thompson which is located in the extreme North-eastern part of Connecticut. The location of the project is shown on Plate No. 1.

2-02. Accessibility. The reservoir area is readily accessible

over a good highway system to the 2,400,000 people who reside within an hour's drive (40 miles) of the reservoir. U. S. Route 44, an east-west road, and State Route 12, a north-south road, both bypass within 2 miles of the reservoir area. State Route 12 and re-located West Thompson Road will provide access to the damsite.

2-03. Project Status. It is anticipated that construction will begin in the spring of 1963 with completion scheduled for the fall of 1965.

2-04. Pertinent Data. The dam will be a rolled earth and rockfill structure 2,550 feet long and 70 feet high above stream bed. A 600 foot long dike with a maximum height of 19 feet will be located on a saddle located approximately 1/2 mile north of the east abutment of the dam adjacent to Reardon Road. The top of the dam and dike will be at elevation 361.5 m.s.l. A side channel spillway with a 320-foot long, L-shaped concrete weir will be located in the right abutment. Spillway crest elevation will be 342.5 m.s.l.

The outlet works will consist of a 12-foot diameter horseshoe shaped cut-and-cover concrete conduit, beneath the dam structure, discharging into the lower part of the spillway channel, and a gate controlled tower at the upstream toe of the dam.

West Thompson Road, a bituminous surfaced town road, will be re-routed on top of the dam, crossing the spillway channel on a steel girder, concrete deck bridge.

The capacity of the reservoir at spillway crest will be 26,800 acre-feet which is the equivalent of a runoff of 6.8 inches from the net drainage area of 74 square miles below Westville Dam. When filled to spillway crest, the reservoir will be about 6.3 miles long with a surface area of about 1250 acres and a shoreline of about 18 miles.

To protect the gates from freezing in the winter as well as enhancing and establishing a valuable fish and wildlife resource, a permanent pool will be created at elevation 305 feet m.s.l. which will have a surface area of 200 acres and a maximum depth of 12 feet. Control of pool levels will be effected by a stop log structure.

The portion of the Quinebaug River within the reservoir area is presently polluted, and the water is unsuitable for swimming. However, the permanent pool will provide a good water

area for fishing and pleasure boating. If at some future time, pollution abatement measures make the water suitable for swimming, full recreational utilization of the pool will be realized.

2-05. Land Acquisition. Land for the project will be acquired in accordance with the policy outlined in EM 405-2-150, as amended, including change 9, dated 9 March 1962. The minimum guide taking line has been established at 300 feet horizontally from spillway crest elevation. Fee title will be acquired to lands within the construction and work areas and to exterior property bounds where required fee acquisition will effectively eliminate access to remainders based on sound real estate practice. The total area to be acquired is estimated at 2330 acres. The project fee area is adequate for access and use of the resources of the reservoir by the public without additional lands for this purpose. The Real Estate Map will be included in the Master Plan.

III. FACTORS AFFECTING RECREATIONAL ACTIVITIES

3-01. Existing Public Recreation Areas. The three states within an hour's drive (40 miles) of the project provide parks, forests and other recreation areas for the public. The development of these vary considerably. The addition of the West Thompson Reservoir will significantly supplement these recreation areas, especially in the provision of a public water area where an existing deficiency is recognized. Plate No. 2 shows the location of existing public recreation areas and available uses.

3-02. Population. The number of persons residing within 40 miles of the reservoir has been recorded at 2.4 million by the 1960 U. S. Census with a population of 700,000 within a radius of 25 miles. This represents a growth of 14 per cent over the 1950 census.

3-03. Anticipated Public Use. Based on a comparative analysis of attendance records at other flood control projects in the vicinity and with allowance for the fact that swimming will not be an attraction, it is conservatively estimated that the average annual attendance of the project area will reach 22,000 by the summer season of 1968.

3-04. Project Resources. The West Thompson Reservoir will be a single-purpose flood control reservoir, and as such may impound floodwaters to depths in excess of 50 feet at the dam. Floodwater storage may occur at any time of the year in the precipitous river basins of New England, but major reservoir operation is most likely to occur in the spring. Experience over the past twenty years in

the operation of other flood control reservoirs in New England indicates that their land area is generally available for use during most of the summer, fall and winter seasons. Experience has further shown that the important benefits accruing from public recreational development and use, fish and game, and forestry management and other uses are compatible with the authorized flood control purpose of these reservoirs. It is therefore concluded that the project is suitable for the development and use as proposed in this preliminary master plan.

The reservoir, with a shallow pool providing maximum fishery benefits, a diversity of cover, and good habitat for resident game species, will offer a highly desirable area for improved public boating and fishing opportunities. The U. S. Fish and Wildlife Service, in a special report dated 12 July 1962, stated that the permanent pool will provide a good warm water fishery and waterfowl management area. There is adequate tree cover for picnicking.

IV. COOPERATING AGENCIES

4-01. Federal Agencies.

(a) U. S. Department of Health, Education and Welfare. On 11 June 1962 the Regional Office reviewed its preliminary evaluation report on vector problems related to this project as furnished to this Division in November, 1957. No modifications to this report were found necessary. The overall effect of the project upon vector production should be beneficial since it will result in a decrease of the highly annoying floodwater mosquitoes (*Aedes vexans*). The report is contained as exhibit No. 2 in the General Design Memo.

(b) U. S. Fish and Wildlife Service. The Northeast Region (Region 5) of the service furnished a conservation and development report dated 12 July 1962, on the fish and wildlife aspects. This report evaluates the post project fish and wildlife resources producing annual recreational values of about \$9,000. The report is contained as Exhibit No. 3 in the General Design Memo. Comprehensive considerations have been given to this report and full treatment of the subject will be included in the Master Plan.

4-02. State Agencies - State of Connecticut.

(a) Connecticut Water Resources Commission. This agency represents the State of Connecticut as coordinator between the Corps and the respective State agencies in planning for water resource de-

velopment projects. They have concurred with the views of the U. S. Fish and Wildlife Service and the Connecticut Board of Fisheries and Game that the best public use of the reservoir would be as a fish and game management area.

(b) Connecticut Board of Fisheries and Game. This agency concurs with the report of the U. S. Fish and Wildlife Service and is prepared to undertake a fish and wildlife management program under suitable license agreement. This program will be developed for inclusion in the Master Plan.

V. SITES SELECTED FOR PUBLIC USE

5-01. General. The area proposed for initial development is located to provide public access and use in the most economical manner with due regard to the possibility of future expansion. Two separate developments are planned within the recreation area, one at the northeast end and the other at the southeast end of the permanent pool. Each development will have a boat launch facility, car and trailer parking, sanitary facilities and a day use picnic area. Plate No. 3 shows the general location of the recreation area.

5-02. Site No. 1 - Southeast End of Permanent Pool. Access to the area will be via Reardon Road and a proposed new access road to be constructed from Reardon Road to the permanent pool. The access road will be constructed over open, generally rolling terrain. Since wooded areas are scarce in this vicinity, only downed branches and dead trees will be removed.

5-03. Site No. 2 - Northeast Corner of Permanent Pool. Access to the area will be via Blain Road and a new road to be constructed from Blain Road to the permanent pool. Primary use of the area will be during the summer season. It will, however, offer an ideal area for ice skating in the winter.

5-04. Vicinity of Dam. Parking, sanitary facilities and an observation area are being provided as a part of project construction for the accommodation of the visiting public at the dam.

VI. COST ESTIMATE

6-01. Cost Estimate. The preliminary estimate of initial cost is based on development of basic facilities by the Federal Government. These facilities will generally conform to criteria set forth

in EM 1130-2-312 including change 1 dated 15 August 1961. A summary of proposed facilities and estimated costs are included in Appendix A.

VII. CONSTRUCTION SCHEDULE

7-01. Construction Schedule. The development of the permanent pool and access thereto will be undertaken at such time as will be in the best interest of the government with respect to the authorized project construction contract. It is planned to have the facilities available for use by the summer season of 1966.

APPENDIX A

ESTIMATE OF COST (Preliminary)

Site No. 1 - Southeast End of Permanent Pool

<u>Item</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Cost</u>
Roads	\$ 4.00	2100 ft.	\$ 8,400
Car and Trailer Parking Area	2.50	3000 s.y.	7,500
Pit-Type Toilets	1800.00	3 ea.	5,400
Picnic Tables	100.00	30 ea.	3,000
Fireplaces	100.00	15 ea.	1,500
Wells - Drinking Water	1500.00	2 ea.	3,000
Boat Launching Ramp	3000.00	Job	<u>3,000</u>
Total			\$31,800

Site No. 2 - Northeast End of Permanent Pool

Roads	4.00	1500 ft.	6,000
Car and Trailer Parking Area	2.50	3000 s.y.	7,500
Pit-Type Toilets	1800.00	3 ea.	5,400
Picnic Tables	100.00	20 ea.	2,000
Fireplaces	100.00	10 ea.	1,000
Wells - Drinking Water	1500.00	2 ea.	3,000
Boat Launching Ramp	3000.00	Job	<u>3,000</u>
Total			\$27,900

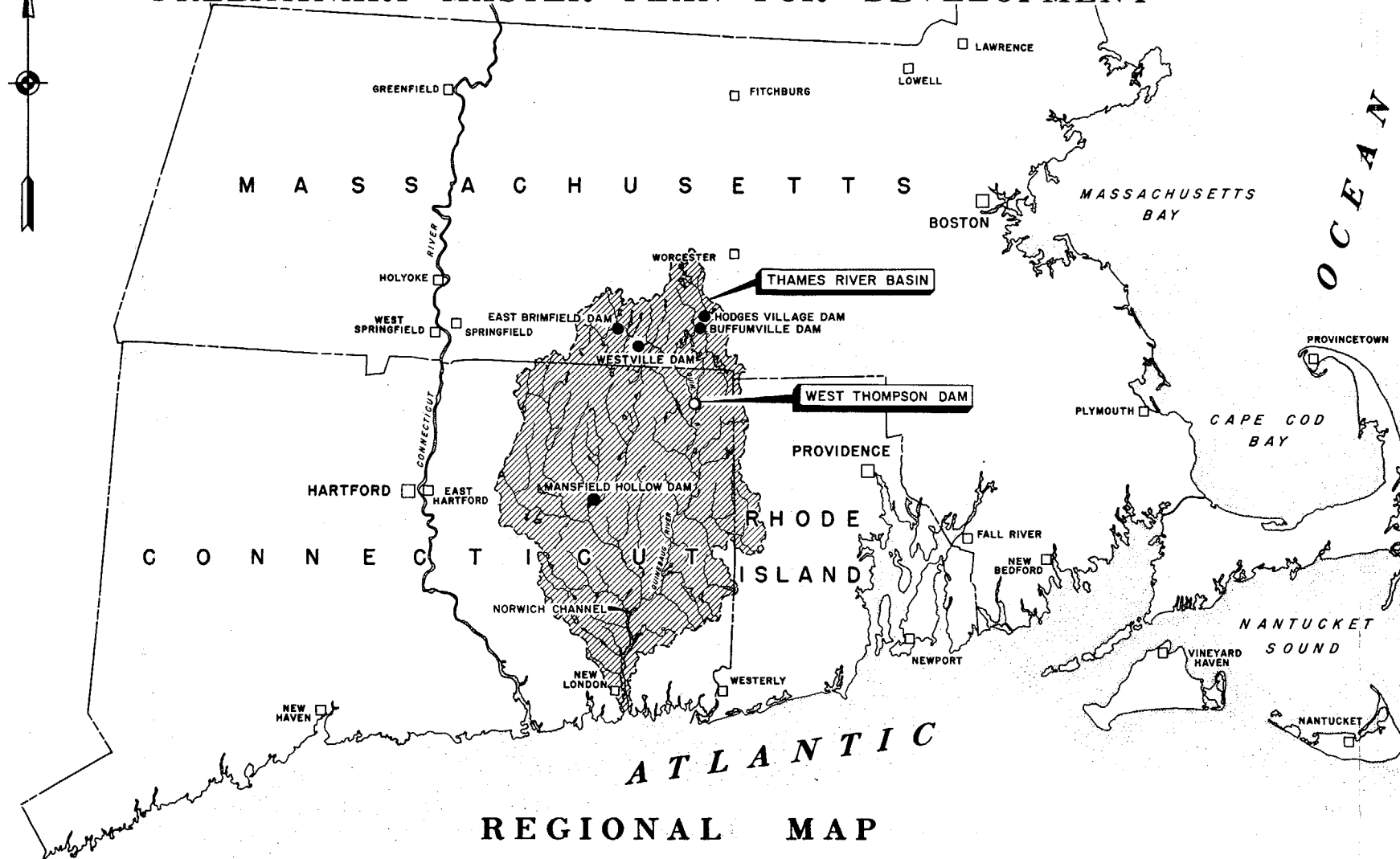
General Reservoir Area

Signs	1000.00	Job	1,000
Chain Barriers	60.00	5 ea.	<u>300</u>
Total			\$ 1,300

SUMMARY OF COST

Site No. 1 - Southeast End of Permanent Pool	\$31,800
Site No. 2 - Northeast End of Permanent Pool	27,900
General Reservoir Area	<u>1,300</u>
Total Construction Cost (Incl. Contingencies)	\$61,000
Engineering and Design	6,100
Supervision and Administration	<u>5,900</u>
TOTAL COST	\$73,000

THAMES RIVER FLOOD CONTROL
WEST THOMPSON RESERVOIR
QUINEBAUG RIVER
PRELIMINARY MASTER PLAN FOR DEVELOPMENT

**LEGEND**

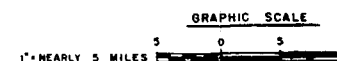
RESERVOIRS COMPLETED	●
RESERVOIRS UNDER CONSTRUCTION	⊗
RESERVOIRS AUTHORIZED	○

SHEET NO.

- 1 REGIONAL MAP AND INDEX
- 2 PUBLIC RECREATION AREAS
- 3 GENERAL DEVELOPMENT PLAN

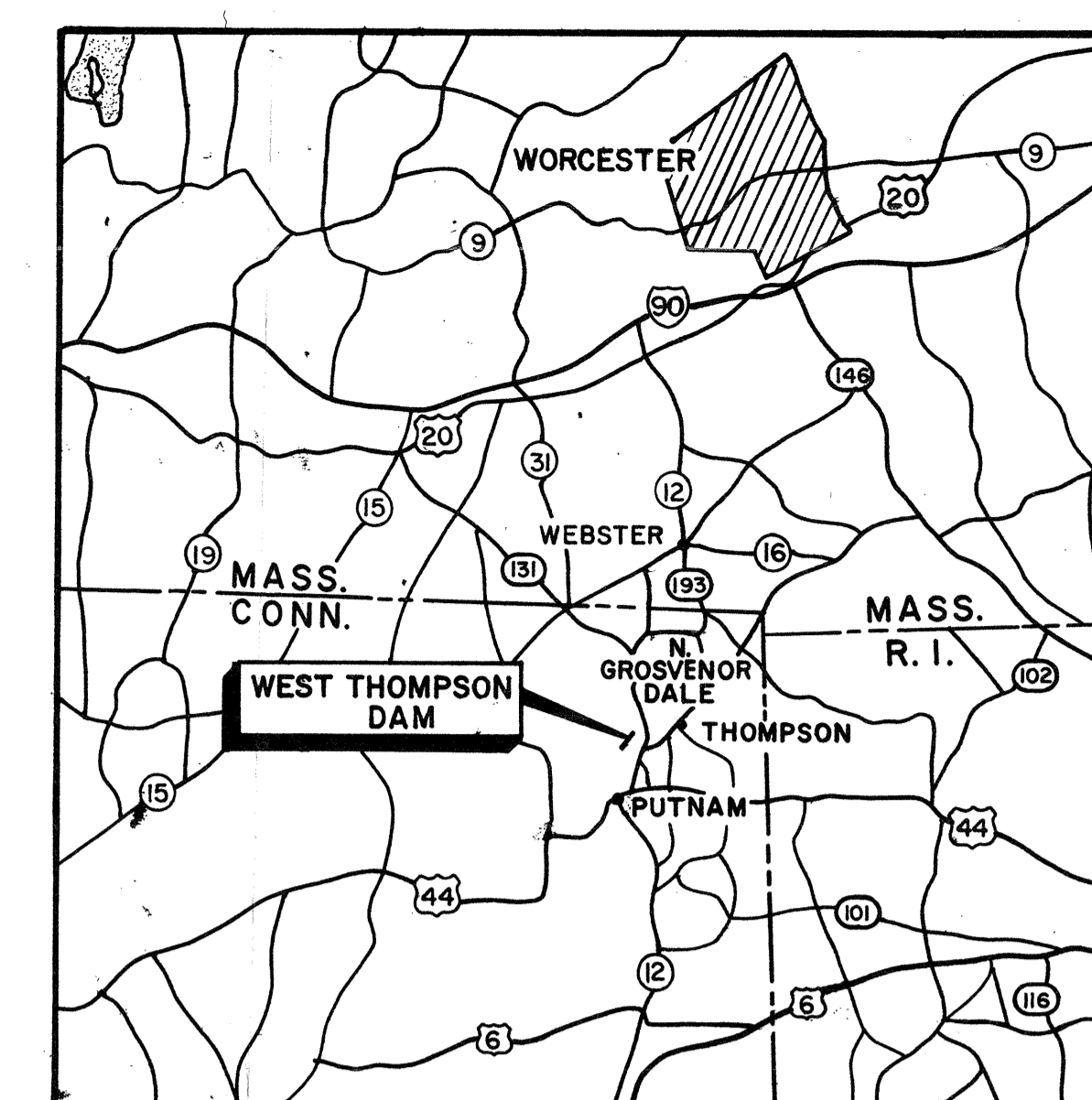
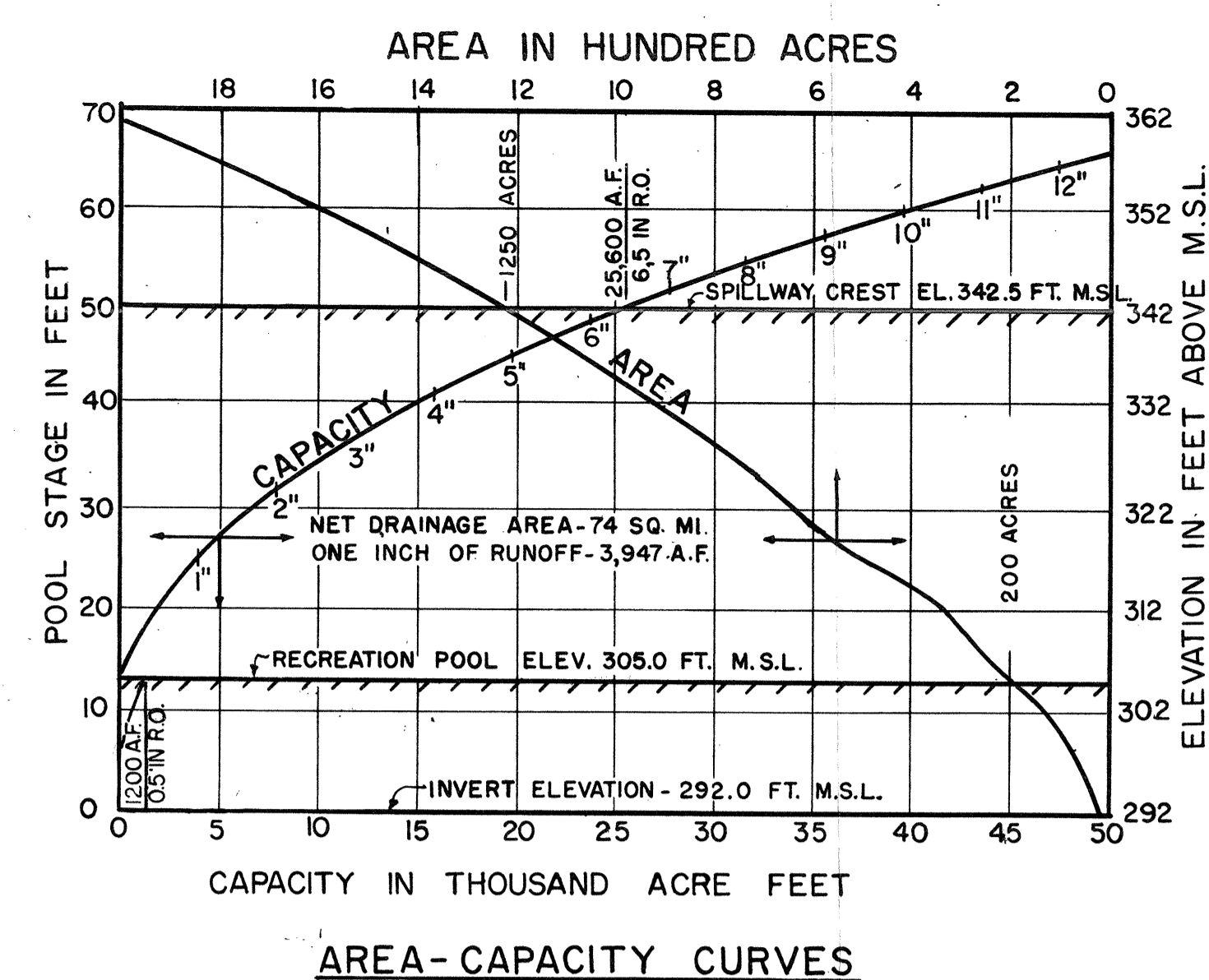
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REVISION	DATE	DESCRIPTION
U. S. ARMY ENGINEER DIVISION, NEW ENGLAND CORPS OF ENGINEERS WALTHAM, MASS.		
DES. BY	DR. BY	CR. BY
SUBMITTED		
CHIEF, RES. DEVELOPMENT SECTION		
APPROVAL RECOMMENDED		
APPROVED		
DATE		
CHIEF, ENGINEERING DIVISION		
SCALE		
SPEC. NO. CIV. ENG. 18-016-63-		
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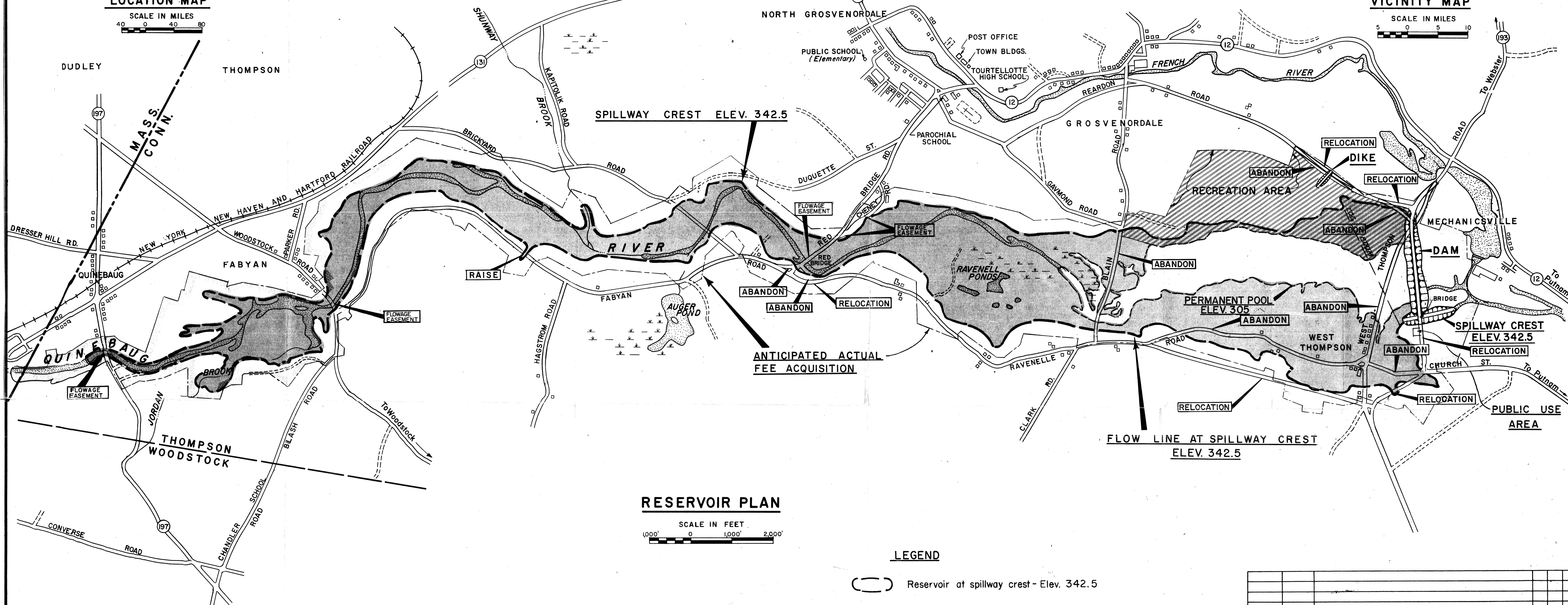


SCALE IN MILES



VICINITY MAP

SCALE IN MILES



RESERVOIR PLAN

SCALE IN FEET .

1,000' 0 1,000' 2,000'

LEGEND

- () Reservoir at spillway crest - Elev. 342.5
 --- Anticipated actual fee acquisition

MAJOR PUBLIC USE AREAS

<u>DESIGNATION</u>	<u>ACREAGE ABOVE PERMANENT POOL</u>	<u>TREE COVER</u>	<u>TERRAIN</u>	<u>ELEV.</u>
1. VICINITY OF DAM PUBLIC USE AREA	2	OPEN	FLAT	361
2. RECREATION AREA	240	WOODED	ROLLING	305-430

[illegible]